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| 10/747,752   | 12/29/2003  | Jung-Fu Cheng        | 4015-5165           | 6122             |
| 24112 7590 06/04/2008<br>COATS & BENNETT, PLLC<br>1400 Crescent Green, Suite 300<br>Cary, NC 27518 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| CAL WAYNE HUU  |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/747,752

**Applicant(s)**

CHENG ET AL.

**Examiner**

WAYNE CAI

**Art Unit**

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 16-28, 30-34 and 52-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-28, 30-34 and 52-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed September 24, 2007 have been fully considered but they are not persuasive.

The Applicant argues that Muller fails to distinguish between a normally provided basis channel report and a selectively provided enhanced channel report, as required in each of the pending claims. The Examiner respectfully disagrees.

With respect to claim language, all claims partially recite "said mobile terminal **determining if said mobile terminal satisfies a condition** based on said at least one common feedback criterion; said mobile **terminal selectively providing an enhanced channel report** regarding said downlink channel **based on said determining.**"

The Applicant is reminded that it is the Examiner's position to give the broadest reasonable interpretation of claim language. Thus, the portion of claim language asserted above is broadly and reasonably interpreted as the mobile terminal determining if the mobile terminal satisfies a condition based on the common feedback criterion and based on the determination, the mobile terminal provide an enhanced channel report regarding the downlink channel. In other words, the mobile terminal **might or might not provide an enhanced channel report regarding the downlink channel** because whether the mobile terminal provides the

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basic or the enhanced channel report is entirely based on the determination step.

Now, let's turn to the teachings of Muller, page 10, lines 18-29 specifically recites:

Fig. 2 outlines in flowchart format example procedures for event-based reporting of mobile station measurements (block 40). The mobile station measures one or more radio-related parameters for one or more cells (block 42). One non-limiting example parameter is the received signal strength of base station broadcast channel signals from current and neighboring cells. **The mobile station evaluates each measured parameter with respect to a predetermined event or condition (block 44). Based on that evaluation, e.g., the predetermined event occurs and/or the predetermined condition is satisfied, the mobile station sends a report to the radio network (block 46). The contents of that report may include more or less information as established by the radio network operator.** For example, the report may simply contain the identification of the cell and identification of the event that occurred. Other information such as the value of the measured parameter, other parameters, and even optional information may also be provided in that report.

Based on this passage, Muller states that the mobile terminal evaluates each measure parameter with respect to a predetermined event or condition, which reads on mobile terminal determines whether the mobile terminal satisfies a condition based on the common feedback criterion of claimed limitation. Furthermore, Muller states that based on this evaluation, the mobile sends a report to the radio network, and the contents of that report is more or less information established by the radio network operator, which reads on the mobile terminal selectively provides a report regarding the downlink channel based on this determining of claimed limitations. The Examiner further notes that a basic report is

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reasonably interpreted as less details report, and whereas an enhanced report is a more details report. Thus, it should be clear to one skilled in the art and the Applicant that Muller does disclose features of these claims.

Furthermore, the Applicant argues at the last paragraph of page 7 that the cited references fails to recognize the significance of the "common feedback criterion". The Examiner respectfully invites the Applicant to further define this phrase in claim language. Unless otherwise, it is broadly and reasonably interpreted as a condition that is transmitted from the base station to the mobile terminal. Since Muller teaches or suggests a condition to be transmitted from the base station to the mobile terminal to be measured and report back to the base station; it reads on claimed limitation.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14, 18-28, 32-34, and 52-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (WO 00/70897) in view of Chen et al. (hereinafter "Chen", US 6,748,224).

**Regarding claims 1, 21, 52, and 58,** Muller discloses a method of reporting channel information in a wireless communication system, comprising:

a mobile terminal receiving at least one common feedback criterion broadcast to a plurality of mobile terminals (fig. 5, block 76; page 9, lines 6-14);

said mobile terminal determining if said mobile terminal satisfies a condition based on said at least one common feedback criterion (fig. 5, block 78; page 10, lines 22-25); and

said mobile terminal selectively providing an enhanced channel report regarding said downlink channel based on said determining (fig. 5, block 78; page 10, lines 3-29); and

wherein said enhanced channel report provides a more detailed view of said downlink channel than said basic channel report (page 10, lines 25-29).

Muller, however, does not specifically teach or suggest a mobile terminal normally providing a basic channel report, said basic channel report at least partially characterizing a downlink channel.

In a similar endeavor, Chen discloses a local position system. Chen also discloses a mobile terminal normally providing a basic channel report, said basic channel report at least partially characterizing a downlink channel (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Muller in view of Chen.

The motivation/suggestion for doing so would have been to accurately monitor and control the communication between the mobile station and network infrastructure.

**Regarding claims 2, and 22,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein providing an enhanced channel report comprises providing an enhanced channel report that is a superset of said basic channel report (page 10, lines 24 to 26 and/or page 12, line 17 to page 13, line 10).

**Regarding claim 3,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises at least one threshold (page 5, lines 11 to 21 and page 12, lines 12 to 16).

**Regarding claim 4,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises a channel quality indicator threshold. Id.

**Regarding claim 5,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises a throughput level threshold. See WO page 12, lines 12 to 16, traffic volume.

**Regarding claim 6,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises at least one range (page 14, lines 12 to 26).

**Regarding claims 7, and 23,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic channel report comprises a channel quality indicator (page 5, lines 11 to 21 and page 12, lines 12 to 16).

**Regarding claims 8, and 24,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein normally providing a basic channel report comprises normally providing a basic channel report on a periodic basis (page 11, lines 5 to 16).

**Regarding claim 9,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said mobile terminal selectively providing an enhanced channel report based on said determining comprises said mobile terminal selectively providing, on a periodic basis, either said basic channel report or said enhanced channel report based on said determining (Figure 4 and corresponding description, in view of the measurement control message, the mobile station would send whichever report was required).

**Regarding claims 10, and 25,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses



wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises further information on said first set of channel parameters (Figures 3-5 and their corresponding descriptions, the mobile station will report on the parameters that are requested by the base station in the measurement control message in the time frame determined in said message. The base station will include the parameters and time frame desired in the measurement control message in order to increase the flexibility and optimize the operations of the system as a whole and to promptly and effectively respond to changing conditions within the system. Also see page 4, lines 20 to 27).

**Regarding claims 11, 12, 26, and 27**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to a second set (or a first set of channel parameters and information related to a second set) of one or more channel parameters of said downlink channel different from said first set of channel parameters. See Id.

**Regarding claim 13**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic channel report comprises a channel quality indicator; and wherein said mobile terminal selectively providing an enhanced channel

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report based on said determining comprises said mobile terminal selectively providing either said basic channel report or said enhanced channel report based on said determining. See *Id.*

**Regarding claims 14, and 28,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses providing an explicit indication of the presence of said enhanced channel report when said enhanced channel report is provided. This is inherent in view of, for example, Figure 4, step 58.

**Regarding claims 18-20, and 32-34,** Muller and Chen teach all the limitations recited within claims as described above, but does not specifically disclose the various combinations of providing a basic channel report over a first logical channel and an enhanced channel report over said first logical channel, at least a second logical channel or where providing over the second logical channel includes selectively providing over said first logical channel and said second logical channel. However, one of ordinary skill in the art at the time the invention was made would have understood that the choice of logical channel for sending either of the basic channel report or the enhanced channel report would be based on resource allocations and volume traffic within the system at the time the given report was to be sent as well as the required bandwidth and necessary channel characteristics required for the reporting channel in view of the reports contents. Therefore, one of ordinary skill in the art at the time the invention was made would have known that various report

schemes including various logical channel combinations would be used to provide the basic channel report and the enhanced channel report as claimed, depending on the system requirements at a given time and system loading.

**Regarding claims 53, and 59,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion comprises determining at least one common feedback criterion based on at least a desired amount of enhanced channel reports (see pages 4 to 6, it is inherent that all of these conditions are predicated on the idea of limiting or having an ideal number of reports so that unnecessary signaling can be reduced and network optimization can be obtained).

**Regarding claims 54, and 60,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a data throughput rate (see Id. and see examples above and Figures 6 to 15).

**Regarding claims 55, and 61,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at

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least one common feed back criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator (see Id. and see examples above and Figures 6 to 15).

**Regarding claims 56, and 62,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a plurality of reported channel quality indicators (see Id. and see examples above and Figures 6 to 15).

**Regarding claim 57, and 63,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses an amount of data queued at said base station for transmission to a plurality of said plurality of mobile terminals (see page 5, line 15, traffic volume, which inherently would include a consideration of data queued at the base station).

4. Claims 16-17, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (WO 00/70897) in view of Chen et al. (hereinafter "Chen", US 6,748,224), and further in view of Seo et al. (hereinafter "Seo", US 2003/10123396).

**Regarding claims 16, 17, 30, and 31**, the combination of Muller and Chen teaches all the limitations recited within claims as described above, but does not specifically disclose employing a first spreading factor when transmitting said basic channel report and indicating the presence of said enhanced channel report by employing a different second spreading factor or pilot pattern when said enhance channel report is transmitted (than when said basic channel report is transmitted).

However, Seo teaches in, for example, Figures 4 a way of off-setting via a different period the CQI information on the uplink HS-DPCCH channel and in Figure 9 the method of actually achieving this by using a mobile terminal to indicate the presence of specific CQI information--refreshment or refinement. See Figures 4 and 9 and the corresponding descriptions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Muller and Chen by using the method of Seo to indicate the presence of the enhanced channel report by using two different spreading factors because the method of Seo indicates to the base station the type of CQI information being transmitted (in Seo, refinement or refreshment). See Figure 4.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Cai/  
Examiner, Art Unit 2617

/Duc Nguyen/  
Supervisory Patent Examiner, Art Unit 2617